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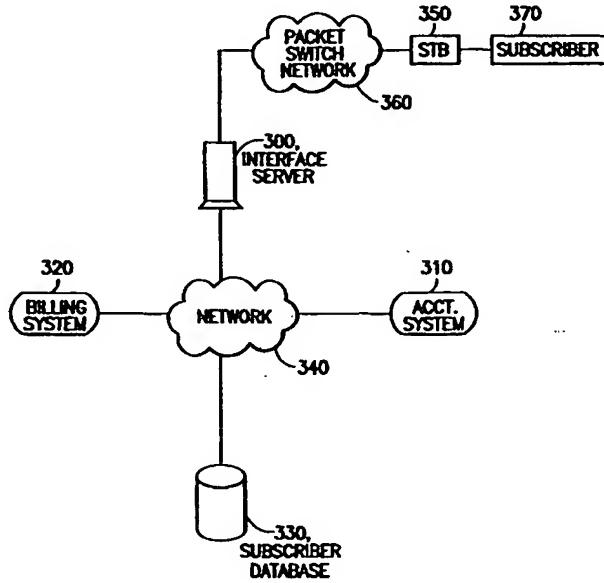
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- (71) Applicants (*for all designated States except US*): **FUTURE TV TECHNOLOGIES, LTD. [IE/IE]; 1F Grey Door, 22-23 Upper Pembroke Street, Dublin 2 [IE]. RZUCIDLO, Eugene, C. [US/US]; Greenberg Traurig, LLP, 885 Third Avenue - 21st Floor, New York, NY 10022 (US).**
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **RAND, Ricky [GB/GB]; The Orchard, 40 Barnington Road, Foxton, Cambridge CB2 6SJ (GB). CLARK, Paul [GB/GB]; The Old Mill, Mount Hawk, Truro, Cornwall TR4 8BL (GB).**
- (74) Agent: **RZUCIDLO, Eugene, C.; Greenberg Traurig, LLP, 885 Third Avenue - 21st Floor, New York, NY 10022 (US).**
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(54) Title: **FLEXIBLE BILLING SYSTEM AND METHOD FOR PROVIDER MEDIA SYSTEM**



**WO 01/39092 A1**



(57) Abstract: This invention relates generally to a flexible billing system (320) and method for monitoring and recording use of a provider supplied media system. The present system comprises an interface server (360) for monitoring the use of the provider supplied media programming by a subscriber (370) an accounting system (310) for calculating (1) a net positive value to charge the subscriber (370) for playing the provider supplied media programming, and (2) a net negative value to charge the subscriber (370) for viewing for playing subsidy media content, and a billing system (320) for billing the subscriber (370) based on the aggregation of the net positive value and net negative value.



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**FLEXIBLE BILLING SYSTEM AND METHOD  
FOR PROVIDER MEDIA SYSTEM**

**CROSS-REFERENCE TO RELATED APPLICATION**

This application claims priority from U.S. provisional application number 60/167,879, filed November 29, 1999, the disclosures of which is incorporated herein by reference.

**FIELD OF THE INVENTION**

This invention relates generally to a flexible billing system and method for monitoring and recording use of a provider supplied media system. In particular the billing system offers the media subscriber flexible billing options for use of the media content supplied by the provider.

**BACKGROUND OF THE INVENTION**

**The Prior Art**

Historically, educational, informational and entertainment programming, such as television programming, have been generated by content providers and delivered to viewers in a variety of formats, including electronic broadcast signals. The programs are delivered utilizing relatively inflexible billing calculation methods, and generally do not provide viewers with viewing options, for example - the ability to view media or programming with or without commercials interruptions.

In the 1960's, Community Antenna Television (CATV) systems were established, initially to provide off-air television signals to viewers in broadcast reception fringe areas. Under FCC regulation, the CATV industry was required to provide local access and original programming in addition to required off-air broadcast signals. Because of the wide bandwidth available on the coaxial cables comprising the CATV systems, additional channels were soon made available for new programming. These systems became what is today referred to as cable television (cable) systems and may include audio as well as video programming. Although subscribers to cable systems were awarded the benefit of new programming, sometimes over 100 channels, the programming was generally prescheduled with the viewer left to tune into the designated channel or station at the appointed time to view a particular program. In addition, cable subscribers were charged a fixed fee for connection to the cable system which provided them with local as well as cable programming channels, regardless of the subscribers total time of use or apportionment of channels viewed.

The local program channels were rebroadcast by the cable system company in the same format received by the originating network broadcast company, including all commercial advertisements. In addition the cable company inserted local commercial advertisements in the basic cable programming channels to defray costs associated with maintaining the cable system. Subscribers were not given the opportunity to view local channels or basic cable television channels without commercial interruptions.

To increase revenues, cable system providers initiated distribution of premium channels and/or pay per

view programming (PPV) viewable only by subscribers having appropriate descramblers. The descrambler would receive premium channels or PPV programming and descramble the video and audio information to supply an output signal cable of reception on a standard television set. While premium and PPV service are generally distributed without commercial interruption, the billing methods for these services are relatively inflexible. Subscribers are charged a flat monthly fee for premium service regardless of subscriber use. Similarly, subscribers are charged a flat fee per program for PPV service, regardless of the amount of a particular program they view.

U.S. patent No. 5,790,174 issued to Richard, et al. describes the evolution of full motion video data for television.

Consumer demand for enhanced on-site digital entertainment, information and communication services at a reasonable, user controllable rate is growing rapidly. These services, colloquially referred to as media on demand services, encompass many prior audio and video services, and may include: basic television service, AM/FM broadcast radio, premium television and video service, PPV programming, video-on-demand (VOD), audio-on-demand (AOD), interactive video and television (IVT), video games and other entertainment programs, educational information and programs, scientific and other database research, "home-shopping", infomercials, Internet access and the like.

U.S. patent No. 5,905,522 to Lawler, U.S. patent No. 5,675,738 to Suzuki et al., U.S. patent No. 5,629,732 to Moskowitz et al., U.S. patent No. 5,606,359 to Youden et al., U.S. patent No. 5,790,174 to Richard, III et al.;

and U.S. patent No. 5,550,577 to Verbiest et al., describe various media on demand services.

Commensurate with this consumer demand for enhanced on-site media on demand service is a demand for subscriber control over the costs associated with these services. Consumers understand the inherent costs associated with providing subscriber programming, but want to control costs by paying only for services specifically used. In addition, subscribing consumers may want to be given the opportunity to view any, some or all programming at a premium rate in order to eliminate or reduce commercial interruption. Conversely, some consumers may want to be given the opportunity to view programming at a discount rate, or be given credit for various viewing options, such as viewing programs with commercial advertising interruptions or taking part in consumer surveys or promotions.

Accordingly, what is needed is an integrated billing system and method for monitoring and recording use of provider supplied media on demand, where the subscriber has control over the subscriber fees, including scenarios where: (i) the subscriber is charged on a pro-rata basis based on use; (ii) the subscriber is afforded the opportunity to view or listen to programming with or without commercial advertisement, and is charged a fee or provided a credit dependent on the amount of such commercial advertising interruption; and (iii) the subscriber is afforded the opportunity to view or listen to programming at a reduced rate, or is provided a credit for taking part in consumer surveys or promotions.

Further, what is needed is a billing system that allows the program provider to monitor and record use of a provider supplied multimedia system to allow the

calculation of license, copyright or other use based fees based on play time of the protected work.

#### SUMMARY OF THE INVENTION

The present invention, a flexible billing system, is directed to a system and method that satisfies the need to bill subscribers on a pro-rata basis based on, *inter alia*, subscriber use.

In addition, the present invention is directed to a system and method that satisfies the need to afford subscribers the opportunity to view or listen to programming with or without commercial advertisement, and calculate subscriber billing based on the amount of such commercial advertising interruption.

Another feature of the present invention is directed to a system and method that satisfies the need to afford subscribers the opportunity to view or listen to programming at a reduced rate, or be provided a credit for taking part in consumer surveys or promotions.

Another feature of the present invention is directed to a system and method that satisfies the need for a billing system that allows the program provider to monitor and record use of a provider supplied multimedia system to facilitate the calculation of license, copyright or other use based fees based on play time of the protected work.

In a preferred embodiment of the present invention, an integrated billing system and method monitors and records use of provider supplied media-on-demand programming, and bills the subscriber positive or negative amounts based on subscriber use and program content. Ideally, the billing system is an integral part of a system for providing integrated on-demand access to interactive media content through a television or similar

multimedia device. However, the billing system can operate as an individual stand-alone package and cooperate with present media systems, as they are known in the art.

Generally, a subscriber is charged a fee (positive value) to view a selection of programming content without commercial advertisement interruption. In addition, a plurality of factors may contribute to the calculation of the subscriber fee including:

(a) Promotional or marketing content may yield a credit to the subscriber (negative value). This value may be influenced by the amount of promotion or marketing content viewed, and credited, for example on a pro-rata basis.

(b) Commercial advertising content may yield a credit to the subscriber (negative value). This value may be influenced by the amount of commercial advertising content viewed, and credited, for example on a pro-rata basis.

(c) Manufacturer's promotions or surveys (similar to Nielson ratings), that allow subscribers to purchase content at a reduced rate, or yield a credit (negative value) to participants.

(d) Subscribers may be allowed to purchase rentals, or commit to subscribing to particular media content early, sometimes prior to public release, at a discount to view later.

(e) Subscribers may be allowed to rewind and review portions of the selected programming content for an additional fee (positive value). This value may be influenced by the amount of content re-reviewed and debited, for example on a pro-rata basis.

(f) Subscribers may be allowed to stop or pause the transmission of programming content and be billed an additional fee (positive value) for the time delay before restarting the transmission. This value may be influenced by the time delay or "outage" time on a pro-rata basis.

Alternatively, a subscriber may be billed an initial subscriber fee, plus a fee for each particular actor (e.g. as could be related to a royalty), a song (e.g., as could be related to copyright), a general fee for the passage of viewing or listening time, or by other metrics.

In a further alternative embodiment, a subscriber may bid, in an auction or similar environment, for any of the aforementioned positively or negatively valued elements, or for a block of them, such as a movie.

In a preferred embodiment of the present invention, when a selection of multimedia program content from the provider system is made, the subscriber is given the opportunity to determine the attributes of content delivery, including whether to view or listen to the programming with commercials. To assist the subscriber in making this determination, the subscriber is provided with a fee schedule depicting the costs associated with each form of delivery. Alternatively, several different categories may be provided to the subscriber, including variations of the amount of commercial advertising interruptions, i.e. many commercials or few commercials.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1A shows an illustrative timeline for a typical selection of media programming and billing,

including commercial advertising insertion points, according to one embodiment of the present invention.

FIGURE 1B shows an illustrative timeline for a typical selection of media programming and billing, without commercial advertising, according to one embodiment of the present invention.

FIGURE 2A shows an illustrative timeline for a typical selection of media programming according to one embodiment of the present invention.

FIGURE 2B shows an illustrative timeline for a typical selection of media programming according to one embodiment of the present invention.

FIGURE 2C shows an illustrative timeline for a typical selection of commercial advertising media programming according to one embodiment of the present invention.

FIGURE 3 shows a block diagram illustrating some system components according to one embodiment of the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

This invention relates to a flexible billing system and method for provider supplied media systems. An example of one such media system is the interactive television system for delivery of media content described in a PCT patent application filed in the U.S. receiving office entitled "A SYSTEM AND METHOD FOR LARGE-SCALE, DISTRIBUTED, PERSONALIZED MEDIA ON DEMAND". This application was filed in the United States Patent Office on September 20, 2000 and is incorporated herein by reference.

A timeline for a typical selection of media programming including commercial advertising insertion points and integrated billing method according to one

embodiment of the present invention is shown in FIGURE 1A. The media programming commences at point 101 and continues through point 108. For the purpose of illustration, the media is depicted as a compilation of four programming intervals (interval 1 from point 101 to 102, interval 2 from point 103 to 104, interval 3 from point 105 to 106, and interval 4 from point 107 to 108) and three commercial advertisements (commercial 1 from point 102 to 103, commercial 2 from point 104 to 105, and commercial 3 from point 106 to 107), but any combination of programming intervals and commercials may be used.

The subscriber selects the programming depicted in figure 1A for viewing. Upon initial selection, point 101, the subscriber is charged a fee to play the media. The fee may be in monetary units, such as dollars, or other types of payment debits or credits, such as, for example vouchers, points, etc. These various fees may be referred to as fee units. In one embodiment of the invention, the initial fee may be zero. In other embodiments of the invention, the initial fee may be based on various factors, including, for example, the type, content, or release date of the media selected. As the subscriber plays the media, additional fees, indicated as positive values, accrue. Such fees may be zero, however, they would preferably be non-zero if the initial fee were zero. Interval 1 between timeline point 101 and 102 depicts positive aggregation of the programming fee.

In another embodiment of the invention, the fee charged the subscriber to play the media may be discounted. By way of example, discounts may be provided based on the time of day, for example, viewing the media programming after midnight, or based on the purchase of particular subscription packages, or the subscriber's

previous purchases (i.e. buy one get one free, watch twice for \$.50 more, etc.). In addition, discounts may be applied for particular groups of subscribers (for example, children or senior citizens).

Similarly, a premium fee may be charged the subscriber to play the media. For example, a subscriber may be charged a premium fee if the subscriber wishes to view the media content early, before the public release date, or during a particular time of day.

The calculation of positive programming fee (charge) can be based on several different methods. In one embodiment of the invention, the positive value fee is calculated based on the number of minutes the media is played. In a second embodiment of the invention, the positive value fee is calculated on the number of frames of media content that is played. In still other embodiments of the invention, the positive value fee for viewing the media may be zero. The calculation of the positive fee may be based on a fixed fee accrued on a "time interval by time interval" or "frame segment by frame segment" basis, or by a variable fee based on the content of the media, i.e. actors, musical scores etc., that comprise the media associated with each interval or frame segment. Other metrics may be used to calculate the positive value fee.

If the subscriber cancels the programming before reaching point 102, the calculation of positive value fee will terminate at the point of cancellation. The subscriber will only be charged a fee based on the pro-rata portion of the media viewed.

At point 102 and continuing through point 103, the subscriber views the first commercial advertisement. The time period comprising the first commercial advertisement depicts negative aggregation of the programming fee.

The calculation of negative programming fee (credit) can be based on several different methods. In one embodiment of the invention, the negative value fee is calculated based on the number of minutes subsidy media content is played. Subsidy media content may include, for example commercials, advertisements, and/or promotional material. In a second embodiment of the invention, the negative value fee is calculated based on the number of frames of subsidy media content played. In still other embodiments of the invention, the negative value fee for viewing the subsidy media content may be zero. The calculation of the negative fee may be based on a fixed fee accrued on a "time interval by time interval" or "frame segment by frame segment" basis, or by a variable fee based on the content of the media, i.e. actors, musical scores etc., that comprise the media associated with each interval or frame segment. Other metrics may be used to calculate the negative value fee.

In one embodiment of the invention, if the subscriber cancels the programming before reaching point 103, the calculation of negative value fee will terminate at the point of cancellation. The subscriber will only be granted a negative value fee based on the pro-rata portion of the commercial advertisement viewed. Similarly, if the subscriber fast-forwards past the commercial advertisement to point 103, the subscriber will only be granted a negative value fee based on the pro-rata portion of commercial programming actually viewed. In another embodiment of the invention, fast forwarding may be disallowed during the commercial advertisement. In yet another embodiment of the invention, commercial advertisements may require subscriber interactivity in order to provide negative value (i.e. credits) to the subscriber. Interactivity

may include, for example the subscriber to provide positive feedback during or after the commercial is viewed.

Continuation of the subscriber playing the media through programming interval 2 at point 103 through 104, commercial 2 at point 104 through 105, programming interval 3 at point 105 through 106, commercial 3 at point 106 through 107 and programming interval 4 at point 107 through 108 continues as typically described above, with the subscriber accruing positive and negative billing values based on the pro-rata portion of content viewed. Upon termination of the media viewing, whether by completion of the media program or early termination by the subscriber, the subscriber's bill for viewing the media is based on the initial fee, positive fee and negative fee values accrued for the portion of media used.

A timeline for a typical selection of media programming without commercial advertising and integrated billing method according to one embodiment of the present invention is shown in FIGURE 1B. The media programming commences at point 101 and continues through point 108.

As described above, the subscriber selects the programming depicted in figure 1B for viewing without commercial interruption. Upon initial selection, point 101, the subscriber is charged a fee to play the media. In one embodiment of the invention, the initial fee may be zero. In other embodiments of the invention, the initial fee may be based on various factors, including, for example, the type, content, or release date of the media selected. As the subscriber plays the media, additional fees, indicated as positive values, accrue. The interval between timeline point 101 and 108 depicts positive aggregation of the programming fees. The

subscriber does not accrue negative value fees for viewing the media without commercial interruption.

If the subscriber cancels the programming before reaching point 108, the calculation of positive value fee will terminate at the point of cancellation. The subscriber will only be charged a fee based on the pro-rata portion of the media viewed. By way of example, if the subscriber cancels the programming at point 101-A, the positive value fee will stop at that point. The subscriber will then be charged for the initial fee, plus the positive value fee accrued to the point of termination.

A timeline for a typical selection of media programming, such as described as interval 1 in Figure 1A is shown in FIGURE 2A. Interval 1 is further divided into six scenes. Scene 1, starting at point 101 and continuing to point 201 comprises a musical soundtrack. Scene 2, starting at point 201 and continuing to point 202 comprises performances by Actor A and Actor B. Scene 3, starting at point 202 and continuing to point 203 comprises performances by Actor B. Scene 4, starting at point 203 and continuing to point 204 comprises performances by Actor A and Actor C. Scene 5, starting at point 204 and continuing to point 205 comprises performances by Actor B. Scene 6, starting at point 205 and continuing to point 102 comprises performances by Actor A and Actor B.

As previously described, the calculation of the positive fee may be a variable fee based on the content of the media, i.e. actors, musical scores etc., that comprise the media associated with each interval or frame segment. During scene 2 at point 201 through 202, Actor A and Actor B both collect royalties based on the subscriber's playing of the media. Accordingly, the

positive fee calculated on a variable basis for this viewing may be, for example, directly proportional to the royalty fee. Similarly during scene 3 at point 202 through 203, only Actor B collects a royalty. Accordingly, the positive fee based on this viewing may be calculated at a lower variable basis than the fee calculated for scene 2.

Similarly, calculation of a variable positive value fee may be based on factors other than the actors performing in a particular scene. A timeline for a typical soundtrack selection of media programming, such as described as interval 1 in Figure 2A is shown in Figure 2B. Soundtrack A is a musical composition written by Composer A. Soundtrack A is further divided into five segments. Segment 1, starting at point 101 and continuing to point 206, comprises a musical performance by Singer A. Segment 2, starting at point 206 and continuing to point 207, comprises a musical performance by Singer B. Segment 3, starting at point 207 and continuing to point 208, comprises a musical performance by Singer A. Segment 4, starting at point 208 and continuing to point 209, comprises a musical performance by Singer B. Segment 5, starting at point 209 and continuing to point 201, comprises a musical duet performed by Singer A and Singer B.

As previously described, the calculation of the positive fee may be based on a variable fee calculated with regard to the content of the media. In one embodiment of the invention, Composer A may receive a fixed fee for any performance of his work, or may receive a fee for each segment performed. In addition Singer A and/or Singer B may receive a royalty based on their performance of the song. By way of example, Singer A receives a royalty during the playing of segment 1 at

point 101 through 206, and segment 3 at point 207 through 208. Singer B receives a royalty during the playing of segment 2 at point 206 through 207, and segment 4 at point 208 through 209. Singer A and B both collect royalties based on the subscriber's playing of the media during segment 5. If the media selection is cancelled by the subscriber prior to performance of a particular segment, the singer may not receive a royalty.

A timeline for a typical selection of commercial advertisement, such as described as interval 1 in Figure 1A is shown in Figure 2C. Commercial 1 is further divided into four scenes. Scene 1, starting at point 102 and continuing to point 210 comprises a musical soundtrack. Scene 2, starting at point 210 and continuing to point 211 comprises performances by Actor D and Actor E. Scene 3, starting at point 211 and continuing to point 212 comprises a performance by Actor D. Scene 4, starting at point 212 and continuing to point 103 comprises a musical soundtrack.

As described above, the calculation of a variable negative value fee may be based on the content of the media, i.e. actors, musical scores etc., that comprise the media associated with each interval or frame segment.

Regardless of the billing method (fixed or variable) to subscribers, the media content provider may use the above-described method to monitor and record royalties due owners of variable license or intellectual property rights associated with the media viewed or reviewed.

A block diagram illustrating some system components according to one embodiment of the present invention is shown in Figure 3.

A central component of inventive system is an interface server 300. The interface server monitors the use of the provider supplied media programming by a

subscriber 370 by communicating with a set top box (STB) 350 over a packet switch network 350. Monitoring includes tracking both the positive and negative values accrued by a subscriber 370 for using selected programming.

The interface server in turn transmits this accrued usage and transmits this information to accounting system 310 and subscriber database 330 over network 340.

Accounting system 310 evaluates the accrued programming data and calculates the net positive and net negative value to charge the subscriber for playing the selected media.

Periodically, the accounting system transmits the subscriber's accrued positive and negative values to a billing system 320 for subscriber billing, and the subscriber database for compiling and tracking the subscriber's usage.

Although the present invention has been described in relation to particular preferred embodiments thereof, many variations and modifications and other uses will become apparent to those skilled in the art. It is preferred, therefore, that the present invention be limited not by the specific disclosure herein, but only by the appended

**WHAT IS CLAIMED IS:**

1. A method for flexible billing of provider supplied media programming, the method comprising the steps of:
  - a. monitoring use of the provider supplied media programming by a subscriber;
  - b. calculating a net positive value to charge the subscriber for playing the provider supplied media programming;
  - c. calculating a net negative value to charge the subscriber for playing subsidy media content;
  - d. aggregating the positive value and negative value accrued by the subscriber for playing the provider supplied media programming and the subsidy media content; and
  - e. billing the subscriber based on the aggregated amount.
2. The method of claim 1 wherein the step of monitoring use of provider supplied media programming by a subscriber further comprises the steps of:
  - a. tracking the amount of the provider supplied media programming played for the subscriber;
  - b. creating a transaction record, related to the provider supplied media programming, in a subscriber database; and
  - c. storing in the transaction record, the subscriber identity and a representation of an amount of provider supplied media programming played for the subscriber.
3. The method of claim 1 wherein the step of calculating the net positive value to charge the

subscriber for playing the provider supplied media programming further comprises the steps of:

- a. determining a first positive fee to charge the subscriber for playing the provider supplied media programming, the first positive fee being equal to zero or more fee units;
  - b. determining a number of media units of the provider supplied media programming played for the subscriber;
  - c. calculating a second positive fee to charge the subscriber based on the number of the media units of the provider supplied media programming played for the subscriber, the second positive fee being equal to zero or more fee units; and
  - d. adding the first positive fee and the second positive fee to calculate the net positive value to charge the subscriber for playing the provider supplied media programming.
4. The method of claim 3 wherein the step of determining the number of media units of provider supplied media programming played for the subscriber comprises determining the number of frames of media content programming that is played.
5. The method of claim 3 wherein the step of determining the number of media units of provider supplied media programming played for the subscriber comprises determining an amount of time the provider supplied media programming is played.
6. The method of claim 3 wherein the step of calculating a second positive fee to charge the

subscriber comprises multiplying the number of media units of provider supplied media programming played for the subscriber by a fixed fee.

7. The method of claim 3 wherein the step of calculating a second positive fee to charge the subscriber comprises multiplying the number of media units of provider supplied media programming played for the subscriber by a variable fee based on the content of the media programming.
8. The method of claim 1 wherein the step of calculating the net negative value to charge the subscriber for playing subsidy media content further comprises the steps of:
  - a. determining a first negative fee to charge the subscriber to play the subsidy media content, the first negative fee being equal to zero or less fee units;
  - b. determining the number of subsidy units of the subsidy media content played for the subscriber;
  - c. calculating a second negative fee to charge the subscriber based on the number of the subsidy units of the subsidy media content played for the subscriber, the second negative fee being equal to zero or less fee units;
  - d. adding the first negative fee and the second negative fee to calculate the net negative value to charge the subscriber for playing the subsidy media content.
9. The method of claim 8 wherein the step of determining the number of the subsidy units of the subsidy media content played for the subscriber

comprises determining the number of frames of the subsidy media content that is played.

10. The method of claim 8 wherein the step of determining the number of the subsidy units of the subsidy media content played for the subscriber comprises determining the amount of time the subsidy media content is played.
11. The method of claim 8 wherein the step of calculating a second negative fee to charge the subscriber comprises multiplying the number of the subsidy units of the subsidy media content played for the subscriber by a fixed fee.
12. The method of claim 8 wherein the step of calculating a second negative fee to charge the subscriber comprises multiplying the number of the subsidy units of the subsidy media content played for the subscriber by a variable fee based on the content of the subscriber media content.
13. A system for flexible billing of provider supplied media programming, the system comprising:
  - a. an interface server for monitoring the use of the provider supplied media programming by a subscriber;
  - b. an accounting system operatively connected to the interface server, the accounting system used for calculating:
    1. a net positive value to charge the subscriber for playing the provider supplied media programming; and

2. a net negative value to charge the subscriber for playing subsidy media content; and
  - c. a billing system operatively connected to the accounting system, the billing system used for billing the subscriber based on the aggregation of the net positive value and net negative value.
14. The system of claim 13 further comprising:
- a. a subscriber database;
  - b. a transaction record stored in the subscriber database, the transaction record comprising the subscriber identity and a representation of the amount of provider supplied media programming and subsidy media content played for the subscriber.
15. The system of claim 14 wherein the amount of provider supplied media programming comprises the amount of time the provider supplied media programming was played for the subscriber.
16. The system of claim 14 wherein the amount of provider supplied media programming comprises the number of frames of the provider supplied media programming played for the subscriber.
17. The system of claim 13 wherein the net positive value to charge the subscriber is based on a fixed fee accrued on a time interval by time interval basis.

18. The system of claim 13 wherein the net positive value to charge the subscriber is based on a fixed fee accrued on a frame segment by frame segment basis.
19. The system of claim 13 wherein the net positive value to charge the subscriber is based on a variable fee accrued on a time interval by time interval basis.
20. The system of claim 13 wherein the net positive value to charge the subscriber is based on a variable fee accrued on a frame segment by frame segment basis.
21. The system of claim 13 wherein the net negative value to charge the subscriber is based on a fixed fee accrued on a time interval by time interval basis.
22. The system of claim 13 wherein the net negative value to charge the subscriber is based on a fixed fee accrued on a frame segment by frame segment basis.
23. The system of claim 13 wherein the net negative value to charge the subscriber is based on a variable fee accrued on a time interval by time interval basis.
24. The system of claim 13 wherein the net negative value to charge the subscriber is based on a variable fee accrued on a frame segment by frame segment basis.

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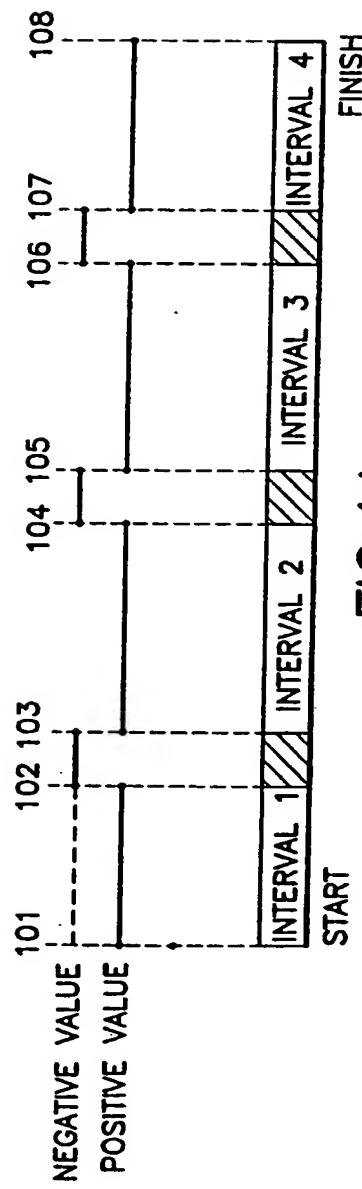


FIG. 1A

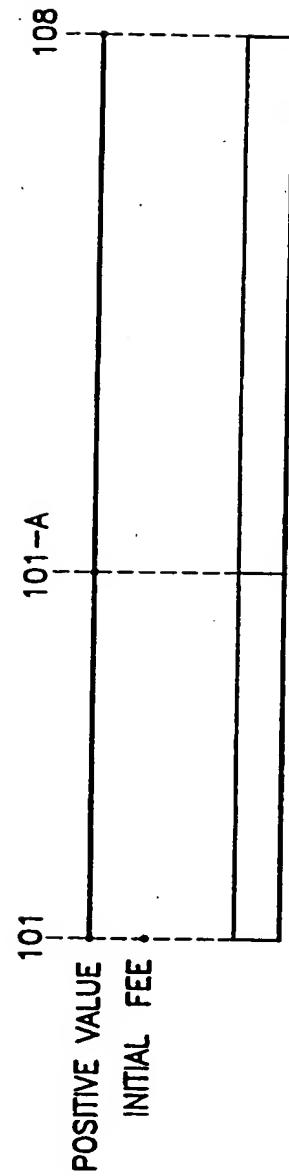


FIG. 1B

2/3

FIG.2A

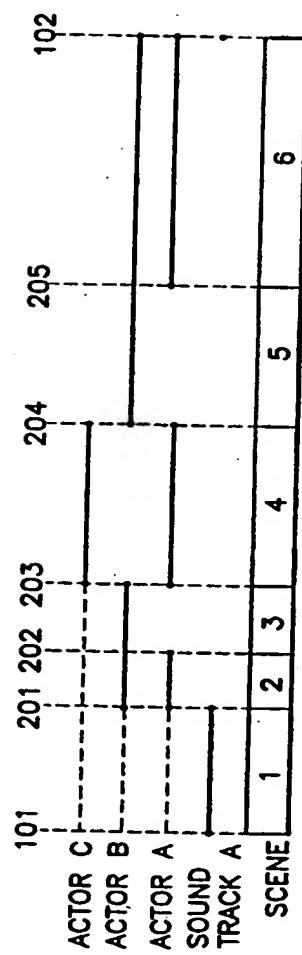


FIG.2B

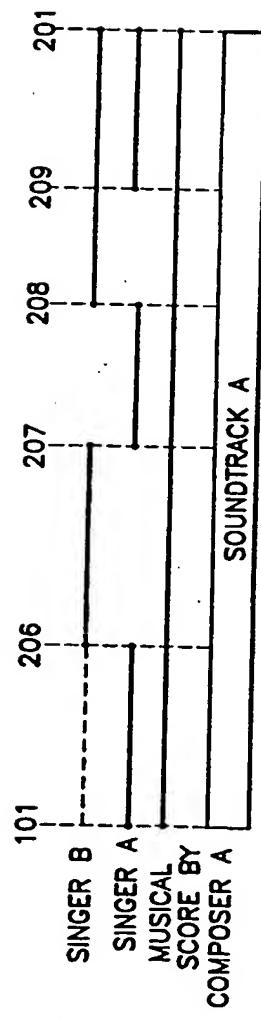
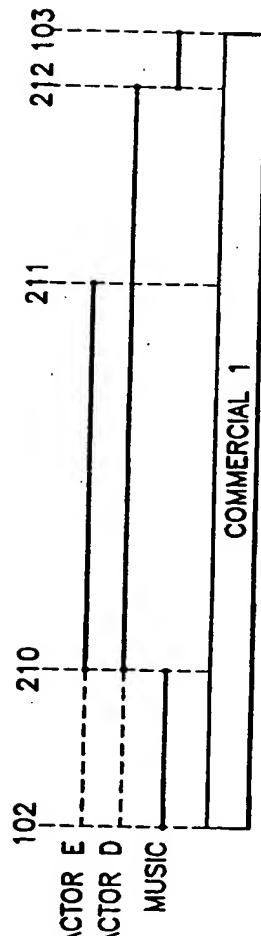


FIG.2C



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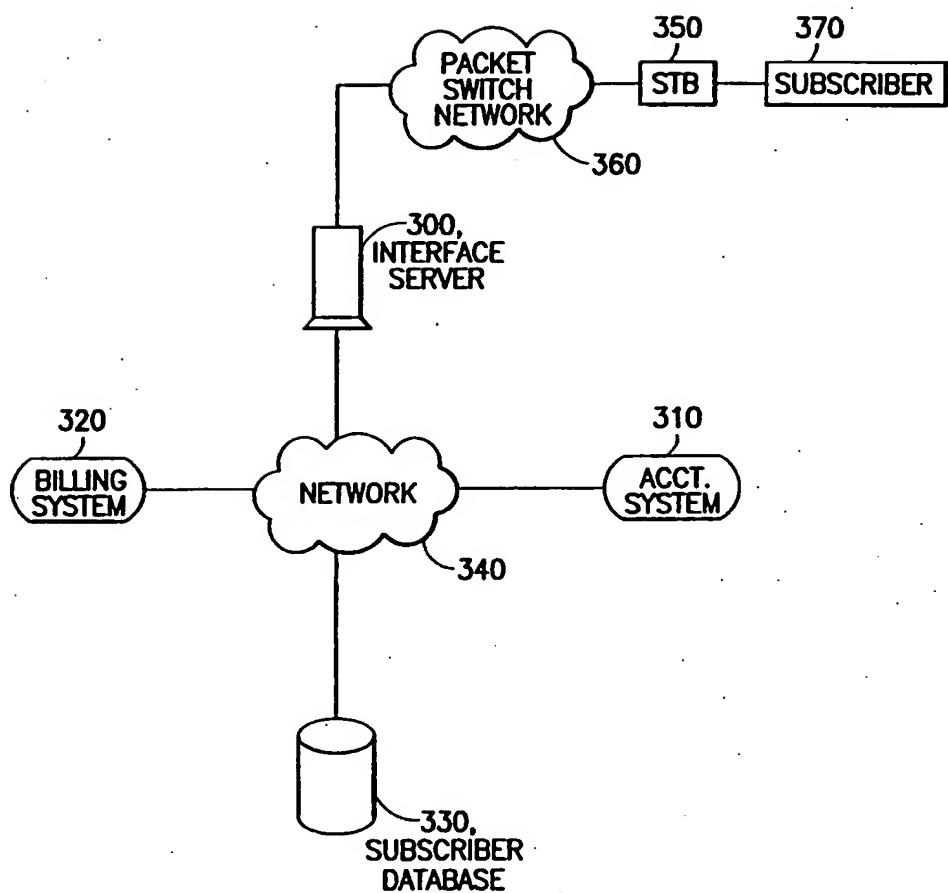


FIG.3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/32506

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :G06F 17/60

US CL :705/34, 40; 348/2, 3

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/34, 40; 348/2, 3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST. DIALOG

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,532,735 A (BLAHUT et al) 02 July 1996, col. 2, line 45 thru col. 6, line 43.	1-24
A	US 5,319,455 A (HOARTY et al) 07 June 1994, entire document.	1-24
A	US 5,523,781 A (BRUSAW) 04 June 1996, entire document.	1-24
A,P	US 6,020,912 A (DE LANG) 01 February 2000, entire document.	1-24

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
23 FEBRUARY 2001	08 MAR 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  HANI KAZIMI <i>James R. Mattheus</i>
Faxsimile No. (703) 305-3230	Telephone No. (703) 305-1061